

REMARKS

Applicants acknowledge with thanks the allowable subject matter set forth in claims 21-26, 31-34, 36, 38 and 62-65. Claim 62 has been amended to independent form based on the allowable subject matter identified by the Examiner. Further, claim 1 has been amended to clarify the location of the drive means, namely that the drive means is located substantially outside the inner space of the rotatable annular ring to further define the invention, albeit not in response to the cited references discussed herein. Support for this amendment is provided at page 17, lines 17-32 of the application as filed.

In the Office Action, restriction was required between two groups of claims (Group I and Group II). The restriction requirement requires election between the claims of Group I, claims 1-45 and 62-65 and the claims of Group II, claims 46-61. Applicants previously provisionally elected the claims of Group I, claims 1-45 and 62-65. Applicants hereby affirm the election of the claims of Group I, claims 1-45 and 62-65 for further prosecution in this application. Claims 46-61 are cancelled in this Amendment. Applicants retain the right to continue the prosecution of claims 46-61 through a divisional application.

In the Office Action, claims 1-10 stand rejected under 35 U.S.C. §102(b) as being allegedly anticipated by U.S. Patent No. 4,299,269 to Friesen et al. (hereinafter "Friesen"). Claims 11-16, 28-30, 35, 37, and 39-45 stand rejected under 35 U.S.C. §103(a) as allegedly unpatentable over Friesen in view of U.S. Patent No. 3,972,368 to Kikkawa et al. (hereinafter "Kikkawa"). Claims 17-20 and 27 stand rejected under 35 U.S.C. §103(a) as being allegedly unpatentable over Friesen in view of U.S. Patent No. 3,200,451 to Worswick (hereinafter "Worswick"). Each of these rejections is respectfully traversed.

The claimed invention, as set forth in independent claim 1, is directed to an aluminum ingot casting machine comprising a source of molten metal, a rotatable annular ring defining a space defined inside, and a drive means located substantially outside the inside ring space for indexing ingot casting moulds to the source of molten metal by rotating the annular ring. The angular ring has a generally vertical axis of rotation and is sized and shaped to carry a plurality of the ingot casting moulds.

The Office Action alleges that Friesen teaches a casting machine capable of casting aluminum ingot comprising a source of molten metal, a rotatable annular ring, a drive means for indexing moulds to a source of molten metal, wherein the annular ring includes a

mould carrying carousel, a support structure comprising floor mounted support rollers, a drive gear fixed to the circular rails, and a sprocket for driving gears, wherein the drive sprocket can be powered by an AC motor. Friesen, however, lacks the claimed rotatable annular ring as set forth in independent claim 1. In contrast, Friesen discloses a gondola-type conveyor for handling sand moulds. The gondolas travel along a curvilinear path of a pair of fixed rails, including top and bottom guide rails (12, 13). The top and bottom guide rails (12, 13) of Friesen support upper and bottom trolley blocks (23, 24) that hold gondolas (18). The individual gondolas (18), in turn, hold sand moulds (37) and jackets (31). A close inspection of Friesen will reveal that the guide rails (12, 13) are fixed and gondolas (18) move along the guide rails (12, 13). In contrast, the claimed rotatable annular ring is rotatable. Additionally, unlike the rotatable annular ring of the present invention, each of the guide rails (12, 13) of Friesen do not have a vertical axis of rotation. Thus, Friesen does not teach, disclose, or remotely suggest the claimed rotatable annular ring set forth in independent claim 1 and cannot be anticipated by Friesen.

Further, unlike Friesen, it is the rotatable annular ring of the claimed invention that itself supports the ingot casting molds. On the other hand, in Friesen it is the individual gondolas (18) that hold sand moulds (37) and jackets (31), not the fixed top and bottom guide rails (12, 13). The fixed top and bottom guide rails (12, 13) are not even of a size or shape to carry casting molds. This further illustrates that Friesen does not disclose or remotely suggest the claimed rotatable annular ring as set forth in independent claim 1.

The Examiner has also asserted that Friesen discloses floor mounted support rollers, claimed in claim 3, and cited trolley blocks (23, 24) that pass along guide rails (12, 13), or roller (26) that rides on guide rails (14, 15) for this claimed structure. None of the cited trolley blocks or rollers are "floor mounted support rollers" that support the circular rails of a rotatable annular ring. They are not floor mounted. Instead, they are disclosed and intended to ride along guide rails (12, 13) as opposed to supporting guide rails (12, 13) of Friesen. Blocks (23, 24) and roller (26) need the support of guide rails (12, 13) of Friesen in order to hold gondolas (18). In contrast, in the present invention the support rollers are floor mounted and support the rotatable annular ring, not vice versa. Hence, Friesen also does not teach or suggest the claimed support rollers set forth in claim 3.

In view of the foregoing, reconsideration of the anticipation rejections of claims 1-10 based on Friesen is respectfully requested.

Claims 11-16, 28-30, 35, 37, 39-45 stand rejected under 35 U.S.C. §103(a) for asserted obviousness over Friesen in view of Kikkawa. Kikkawa is cited by the Examiner for disclosing a Y-shaped launder and a skimming apparatus for scraping dross off molten metal. Kikkawa does not account for the appreciable deficiencies of Friesen noted above, namely, its lack of teaching a rotatable annular ring having a generally vertical axis of rotation sized and shaped to carry a plurality of ingot moulds. Thus, the obviousness rejections of these claims should be withdrawn.

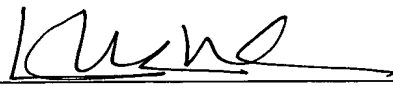
Claims 17-20 and 27 stand rejected under 35 U.S.C. §103(a) for asserted obviousness over Friesen in view of Worswick. Worswick is cited by the Examiner for disclosing a water sprayer on the underside of a mould for cooling. Worswick does not account for the appreciable deficiencies of Friesen noted above, namely, its lack of teaching a rotatable annular ring having a generally vertical axis of rotation sized and shaped to carry a plurality of ingot moulds. Thus, the obviousness rejections should be withdrawn as well.

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Based on the foregoing, Applicants respectfully request withdrawal of the rejections of the claims and favorable reconsideration. Should the Examiner wish to discuss any of these issues in further detail, the Examiner is invited to contact Applicants' undersigned representative by telephone at 412-471-8815.

Respectfully submitted,

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